Kramer Electronics, Ltd.

USER MANUAL

Model:

WP-101

XGA/Stereo Audio Line Driver

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 1,000-plus different models now appear in 11 groups[1] that are clearly defined by function.

Congratulations on purchasing your Kramer Wall Plate **WP-101** *XGA/Stereo Audio Line Driver*, which is ideal for:

- Presentation and multimedia applications
- Long range graphics distribution for schools, hospitals, security and stores

The package includes the following items:

- **WP-101** *XGA/Stereo Audio Line Driver*
- Power supply (12V DC output)
- This user manual[2]

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance, high resolution cables[3]

3 Overview

The Kramer **WP-101** wall plate is an *XGA/Stereo Audio Line Driver* that accepts computer graphics video (up to UXGA) and an unbalanced stereo audio signal, and outputs them as (balanced and unbalanced) stereo audio and RGBHV video signals. The **WP-101** *XGA/Stereo Audio Line Driver* features:

- A computer graphics video UXGA input and an unbalanced stereo audio input
- RGBHV video output on BNC connectors and a terminal block[4]

1 GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Range Extenders and Repeaters; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Scalers; and GROUP 8: Cables and Connectors

2 Download up-to-date Kramer user manuals from http://www.kramerelectronics.com

3 The complete list of Kramer cables is available from http://www.kramerelectronics.com

4 Only one of these outputs can be active at a time. You cannot connect both simultaneously

- Line-level balanced and unbalanced[1] stereo audio outputs on terminal blocks
- 12V DC power supply

3.1 Defining the EDID

EDID (Extended Display Identification Data[2]) is a data-structure that the display provides to describe its capabilities to a graphics card connected to the display's source. The EDID enables the source, such as a PC, to "know" what kind of monitor is connected to the output.

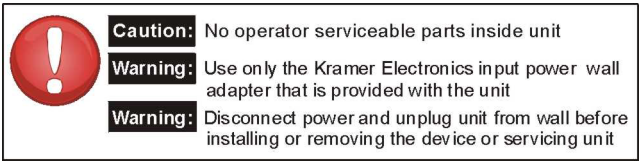
The EDID includes information, such as, the name of the manufacturer, product type, timing data supported by the display, display size, luminance data, and (for digital displays only) the pixel mapping data.

The **WP-101** is supplied with a default EDID, but it can also store and recall EDID data in non-volatile memory, allowing convenient and reliable connection to the source.

3.2 Recommendations for Achieving the Best Performance

Achieving the best performance means:

- Utilizing only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances and positioning your **WP-101** away from moisture, excessive sunlight, and dust



4 Defining the WP-101 XGA/Unbalanced Stereo Audio Line Transmitter

Figure 1 and Table 1 define the front and rear panels and features of the **WP-101**.

1 Both balanced and unbalanced outputs may be used simultaneously

2 EDID is defined by a standard published by the Video Electronics Standards Association (VESA)

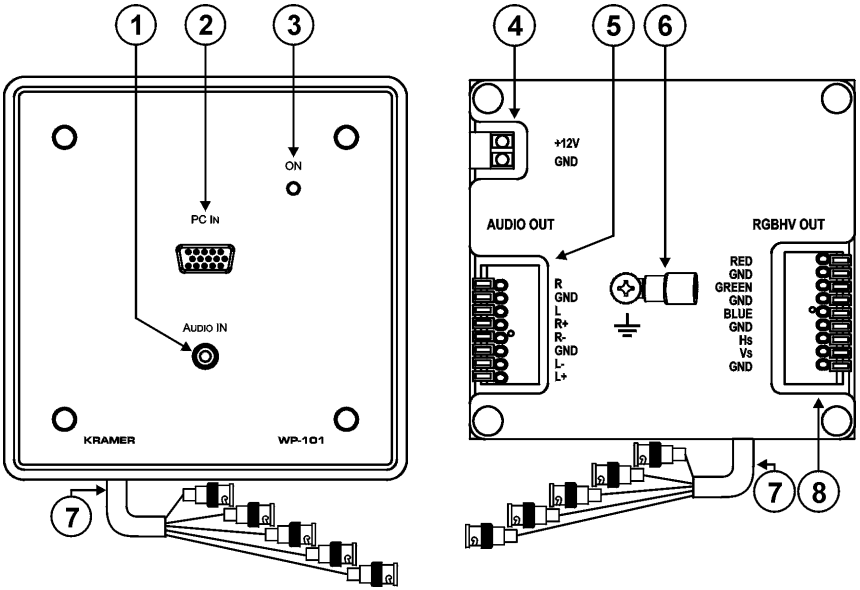


Figure 1: WP-101 Front Panel and Rear Panels

Table 1: WP-101 Front and Rear Panel Features

#	Feature		Function
1	*AUDIO IN* 3.5mm Mini Jack		Connect to an unbalanced stereo audio source
2	*PC IN* XGA 15-Pin HD (F) Connector		Connect to an XGA video source
3	*ON* LED		Lights red when receiving power, lights green when receiving a signal from a video source
4	*+12V* PIN	Power Spring-Loaded Terminal Block	Connect to the positive (red/+) of the power adapter
	GND PIN		Connect to the negative (black/-) of the power adapter
5	*AUDIO OUT* 8-pin Audio Line-level Output Spring-Loaded Terminal Block		Connect to balanced and/or unbalanced stereo audio acceptor1 (see Section 4.3)
6	⏚ Ground		Ground connection. Ring-tongue terminal and grounding screw (see Section 4.2)
7	*RGBHV OUT Component Video Output*[2]	*RGBHV Video* Output Cables with Female BNC Connector Terminations	Connect to RGBHV component video acceptor (see Section 4.4)
8		*RGBHV OUT* 9-pin RGBHV Video Output Spring-Loaded Terminal Block	Connect to RGBHV video acceptor (see Section 4.4)

1 Both balanced and unbalanced outputs may be used simultaneously

2 Only one of these outputs can be active at a time. You cannot connect both simultaneously

4.1 Installing and Connecting the WP-101 XGA Line Transmitter

Figure 2 illustrates a typical **WP-101** installation.

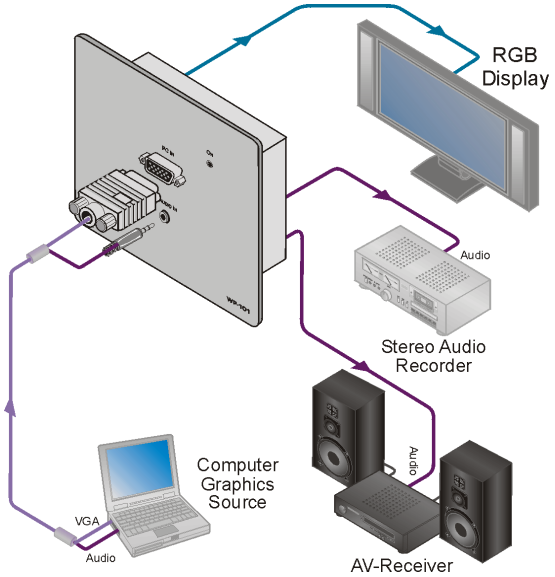


Figure 2: Connecting the WP-101 XGA/Stereo Audio Line Driver

4.1.1 Installing the WP-101 XGA/Stereo Audio Line Driver

To install the WP-101 as illustrated in the example in Figure 2:

1. Using the pre-installed wiring in the wall box opening that connects to the unbalanced audio recorder, connect the Audio Out unbalanced (R, GND and L) terminal block to the unbalanced audio recorder.
2. Using the pre-installed wiring in the wall box opening that connects to the balanced, stereo audio amplifier, connect the AUDIO OUT balanced[1] (L, R+, R-, GND, L- and L+) terminal block to the balanced audio amplifier.
3. Using the pre-installed wiring in the wall box opening that connects to the video acceptor, connect the RGBHV OUT terminal block to the component video acceptor[2].
4. Recommended—Ground the wall plate (see Section 4.2).
5. Connect the 12V DC power supply to the power terminal block[3] taking care that the wiring polarity is correct.

1 Both balanced and unbalanced outputs can be used simultaneously

2 Either the BNC or terminal block output can be active, they cannot be connected simultaneously

3 Connect the wire labeled + to the +12V connector and the wire labeled – to the GND connector

6. Insert the **WP-101** into the wall box opening and secure it using the supplied screws.

4.1.2 Connecting the WP-101 XGA/Stereo Audio Line Driver

To connect the WP-101 as illustrated in the example in Figure 2:

1. Connect the VGA source to the PC IN connector.
2. Connect the unbalanced stereo source to the AUDIO IN connector.

4.2 Grounding the WP-101 XGA/Stereo Audio Line Driver

Grounding the **WP-101** is recommended.

The grounding wire is connected to the rear of the chassis of the unit.

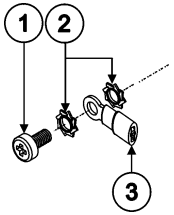


Figure 3: WP-101 Grounding Components

Table 2: WP-101 Grounding Component Descriptions

#	Item
1	M3 x 6 Screw
2	1/8" Toothed lock washers
3	M3 Ring tongue terminal

The grounding screw is used to earth the chassis of the unit to the ground of the building, thus preventing static electricity from interfering with the product's performance.

To connect the grounding to the WP-101 as illustrated in Figure 3:

1. Crimp the ring-tongue terminal to the building grounding point wire. (We recommend that you use a green-yellow 18 AWG wire (0.82mm^2) crimped with a proper hand-tool).
2. Insert the M3x6 screw through the toothed lock washers and the ring-tongue terminal in the order shown above.
3. Insert the M3x6 screw (with the two toothed lock washers and ring-tongue terminal in place) into the grounding screw hole on the rear of the **WP-101** and tighten the screw.

4.3 Wiring the AUDIO OUT 8-Pin Terminal Block

The 8-pin spring-loaded terminal block is an easy plug-in connector for attaching the cable to the audio acceptors.

Figure 4 defines the pinouts for the terminal block.

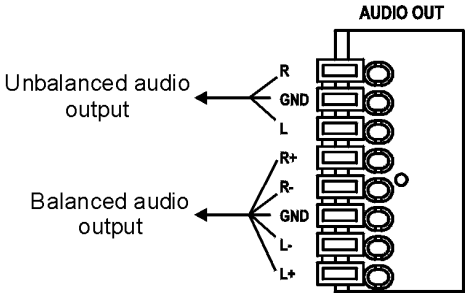


Figure 4: Audio Out Terminal Block Pinouts

To connect cabling to the terminal block:

1. Strip the insulation from each conductor.
2. Press the conductor into the relevant hole.
   The spring-loaded contact automatically grips the conductor.
3. Repeat for each conductor.

To remove a conductor from the terminal block:

1. Press the lever corresponding to the conductor to be removed.
2. While pressing the lever, pull the conductor from the connector.

Note:

- Press the spring-loaded lever only when removing wires, not when inserting them
- Each conductor should protrude 9 mm (0.35") from its insulation so that it can be easily connected. To prevent conductors from shorting, ensure that each wire is fully inserted

4.4 Wiring the RGBVHV OUT 9-Pin Terminal Block

The 9-pin spring-loaded terminal block is an easy plug-in connector for attaching the video cables.

Figure 4 defines the pinouts for the terminal block.

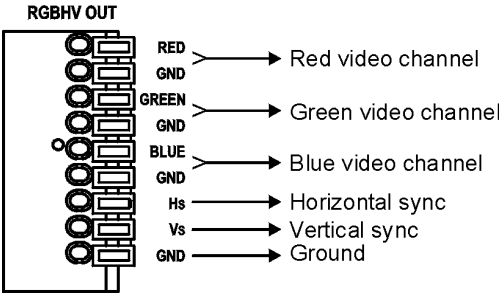


Figure 5: RGBHV OUT Video Terminal Block Pinouts

To insert or remove conductors from the terminal block, follow the instructions in Section 4.3.

4.5 Wiring the Power Connector

The power supply connections are illustrated in Figure 6.

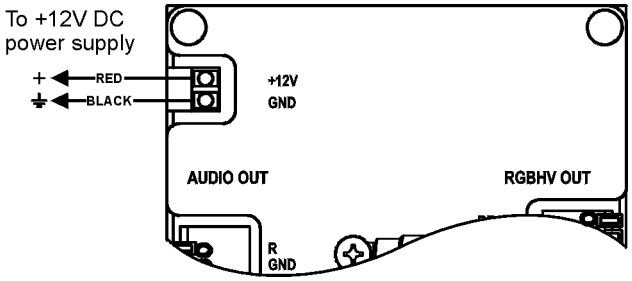


Figure 6: WP-101 Power Supply Connection

To connect the power supply to the WP-101, as illustrated in Figure 6:

1. Strip about 5mm (0.2”) from the insulation of the power supply wires.
2. Insert the wires fully into the connector block taking care that the polarity is correct.
3. Using a small, flat screwdriver, tighten the terminal block screws to hold the wires securely in place.

5 Assigning an EDID

The EDID can either be captured automatically by the **WP-101** transmitter (see Section 5.1), or you can set it manually with one of the preconfigured values (see Section 5.2).

5.1 Capturing the EDID from a Display Device

To capture the EDID from a display device:

1. Using a Philips screwdriver, remove the four screws holding the faceplate to the PCB assembly.
2. Using a short cable[1], connect the PC IN 15-pin HD input connector on the **WP-101** to the XGA connector of the display and turn the display on.
3. Ensure that the rotary switch (see Figure 7) is in position 0. If it is not, use a small screwdriver to turn it to 0.
4. Connect the supplied 12V DC power adapter to the power terminal block (see

1 For example, Kramer model number C-MGM/MGM-1

Section 4.5) on the **WP-101** and connect the adapter to the mains electricity.

5. Press the EDID capture button (see Figure 7).
   The EDID status LED flashes slowly several times. The new EDID is captured when the LED stops flashing and lights solid.
6. Unplug the power adapter from the mains and disconnect it from the **WP-101**.
7. Replace the faceplate and secure the four screws removed in Step 1.

5.2 Setting a Preconfigured EDID

Figure 7 and Table 3 define the location of the PCB features used when setting the EDID manually.

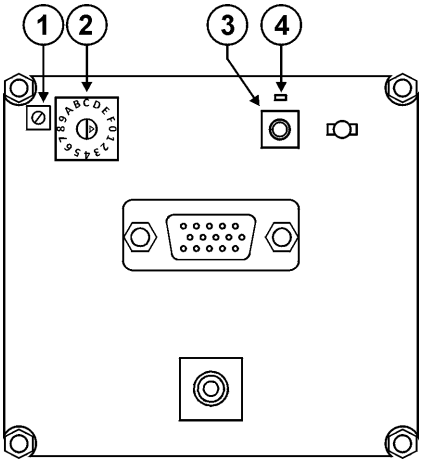


Figure 7: WP-101 PCB Assembly Front View with Face Plate Removed

Table 3: WP-101 PCB Assembly Features

#	Feature	Function
1	Equalization Trimmer	Using a small, flat screwdriver, turn to adjust the signal equalization (see Section 5.3)
2	16 Position Rotary Switch	Using a small, flat screwdriver, turn to select the EDID resolution and refresh rate (see Table 4)
3	EDID Capture Button	Press to capture the EDID
4	EDID Status LED	Flashes green slowly when capturing a valid display EDID; lights solid when EDID has been successfully captured; flashes rapidly when setting a preconfigured EDID

To set a preconfigured EDID:

1. Using a Philips screwdriver, from the rear of the unit, remove the four screws holding the face plate panel to the rear PCB assembly.
2. Using a small, flat screwdriver, turn the rotary switch located on the PCB assembly (see Figure 7) to the required position as defined in Table 4.

3. Connect the 12V DC power adapter to **WP-101** (see Section 4.5) and to the mains electricity.
4. Press the EDID CAPTURE button (see Figure 7).
   The EDID status LED flashes green rapidly several times. The new EDID is captured when the LED stops flashing and lights solid.
5. Unplug the power adapter from the mains and disconnect it from the **WP-101**.
6. Replace the faceplate and secure the four screws removed in Step 1.

Table 4: WP-101 Rotary Switch EDID Resolution Settings

Rotary Switch Position	Resolution	Refresh Rate
0 (Default)	1024x768	60Hz
1	800x600	60Hz
2	1024x768	60Hz
3	1152x864	75Hz
4	1280x720	60Hz
5	1280x800	60Hz
6	1024x1024	60Hz
7	1360x768	60Hz

Rotary Switch Position	Resolution	Refresh Rate
8	1440x900	60Hz
9	1440x1050	60Hz
A	1600x1200	60Hz
B	1680x1050	60Hz
C	1920x1080	60Hz
D	1920x1200	60Hz
E	For future use	
F	For future use	

5.3 Setting the Equalization

To adjust the signal equalization:

1. Using a Philips screwdriver, from the rear of the unit, remove the four screws holding the face plate panel to the rear PCB assembly.
2. Using a small, flat screwdriver, turn the trimmer located on the PCB assembly (see Figure 7).
3. Connect the 12V DC power adapter to **WP-101** (see Section 4.5) and to the mains electricity.
4. Replace the faceplate and secure the four screws removed in Step 1.

6 Technical Specifications

Table 5 lists the technical specifications of the **WP-101** *XGA/Stereo Audio Line Driver*.

Table 5: Technical Specifications[1] of the WP-101

INPUTS:	1 UXGA on a 15-pin HD (F) connector 1 Unbalanced stereo audio on a 3.5mm mini jack 1 Power 12V DC on 2-pin spring-loaded terminal block	
OUTPUTS:	1 Audio balanced and 1 unbalanced on an 8-pin spring-loaded terminal block 1 RGBHV component video on a 9-pin spring-loaded terminal block or on 5 BNC cables	
MAX. OUTOUT LEVEL:	Video: 1.7Vpp	Audio: 8.5Vpp unbalanced, 16.6Vpp balanced
BANDWIDTH (-3dB):	Video: 380MHz	Audio: >20kHz
DIFF. GAIN:	0.08%	
DIFF. PHASE:	0.05Deg	
K-FACTOR:	0.2%	
S/N RATIO:	Video: 68dB @5MHz	Audio: 87dB unbalanced, 85dB balanced
CROSSTALK (all hostile):	Audio: -51dB (from video)	
CONTROLS:	0 to 10dB equalization @50MHz	
COUPLING:	Video: DC	Audio: Input AC, Output DC
AUDIO THD + NOISE:	0.01%	
AUDIO 2nd HARMONIC:	Unbalanced 0.003%, balanced 0.001%	
POWER SOURCE:	12V DC 80mA	
DIMENSIONS:	2 Gang US 114.3mm x 114.3mm (4.5" x 4.5") W, D	
WEIGHT:	0.14kg. (0.31lbs.) approx.	
ACCESSORIES:	Power adapter	

1 Specifications are subject to change without notice

LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

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If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

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If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

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For the latest information on our products and a list of Kramer distributors, visit our Web site www.kramerelectronics.com **where updates to this user manual may be found.**
We welcome your questions, comments and feedback.

Safety Warning:
Disconnect the unit from the power supply before opening/servicing.

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